

Appln. No. 09/756,036
Amendment dated November 14, 2005
Reply to Office Action of August 12, 2005

Amendments to the Claims:

Please add new claim 12 as follows. The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Previously Presented). An image forming apparatus for forming an image on a recording material, the image forming apparatus comprising:

(a) a writing section for writing according to image data;

5 (b) an oscillator for generating a synchronizing clock signal synchronized with a predetermined frequency;

(c) a spreading clock generator for spreading a band of a reference clock which is synchronized with the predetermined frequency, and generating spreading clock signals; and

10 (d) a plurality of control circuits for controlling the image forming apparatus or each section of the image forming apparatus including a writing control circuit for controlling the writing section,

wherein at least one control circuit of the control circuits 15 other than the writing control circuit is driven by the spreading

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clock signals, and the writing control circuit is driven by the synchronizing clock signal.

Claim 2 (Previously Presented). The image reading apparatus of claim 1, further comprising:

(a) a photoelectric conversion section for receiving light from an original document and for conducting a photoelectric conversion;

(b) a photoelectric conversion control circuit for controlling the photoelectric conversion section;

(c) a reading image processing circuit for processing image data output from the photoelectric conversion section; and

(d) a spreading clock generator for spreading a band of a reference clock which is synchronized with a predetermined frequency, and for generating spreading clock signals,

wherein the photoelectric conversion control circuit and the read image processing circuit are driven by a same spreading clock signal of the spreading clock signals.

Claim 3 (Previously Presented). An image forming apparatus comprising:

(a) a laser light source for emitting light;

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(b) a deflector for deflecting the light emitted from the
5 laser light source in a primary scanning direction;

(c) a detector for detecting the light deflected by the
deflector, and outputting an index signal;

(d) a writing control circuit for controlling a modulation
of the light emitted from the laser source according to the index
10 signal output from the detector;

(e) a spreading clock generator for spreading a band of a
reference clock which is synchronized with a predetermined
frequency, and generating spreading clock signals according to a
predetermined modulation profile; and

15 (f) a resetting section for resetting the spreading clock
generator according to the index signal,
wherein the writing control circuit is driven by the
spreading clock signals.

Claim 4 (Previously Presented). An image forming apparatus
for forming an image on a recording material, comprising:

(a) a first spreading clock generator for spreading a band
of a reference clock which is synchronized with a predetermined
5 frequency, and for generating first spreading clock signals;

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(b) a second spreading clock generator for spreading a band of a reference clock which is synchronized with the predetermined frequency, and for generating second spreading clock signals;

10 (c) a first control circuit for controlling the image forming apparatus or each section of the image forming apparatus, the first control circuit being driven by the first spreading clock signals; and

15 (d) a second control circuit for controlling the image forming apparatus or each section of the image forming apparatus, the second control circuit being driven by the second spreading clock signals,

wherein a spreading width of the first spreading clock signals is different from that of the second spreading clock signals.

Claim 5 (Previously Presented). The image forming apparatus of claim 4,

5 wherein the first control circuit is an interface control circuit for controlling an interface communicating with an outer equipment, the second control circuit is at least one of a control circuit from among a writing control circuit for controlling a writing section which writes according to image data, a photoelectric conversion control circuit for controlling

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a photoelectric conversion section which receives light from an
10 original document and converts a photoelectric conversion, a
reading image processing circuit for processing image data output
from the photoelectric conversion section, an operation control
circuit for controlling an operation section, a sequence control
circuit for controlling a sequence of an entire image forming
15 apparatus, and an ADF control circuit for controlling an
automatic document feeder, and

wherein the spreading width of the first spreading clock
signals is smaller than that of the second spreading clock
signals.

Claim 6 (Previously Presented). The image forming apparatus
of claim 4,

wherein the first control circuit is a writing control
circuit for controlling a writing section which writes according
5 to image data, the second control circuit is at least one of a
control circuit from among a photoelectric conversion control
circuit for controlling a photoelectric conversion section which
receives light from an original document and conducts a
photoelectric conversion, a reading image processing circuit for
10 processing image data output from the photoelectric conversion
section, an operation control circuit for controlling an

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operation section, a sequence control circuit for controlling a sequence of an entire image forming apparatus, an ADF control circuit for controlling an automatic document feeder, and an
15 interface control circuit for controlling an interface communicating with an outer equipment, and

wherein the spreading width of the first spreading clock signals is smaller than that of the second spreading clock signals.

Claim 7 (Previously Presented). The image forming apparatus of claim 4,

wherein the first control circuit is a photoelectric conversion control circuit for controlling a photoelectric conversion section which receives light from an original document and conducts a photoelectric conversion, the second control circuit is at least one of a control circuit from among an operation control circuit for controlling an operation section, a sequence control circuit for controlling a sequence of an entire image forming apparatus, and an ADF control circuit for controlling an automatic document feeder, and
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wherein the spreading width of the first spreading clock signals is smaller than that of the second spreading clock signals.

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Claim 8 (Previously Presented). An image forming apparatus for forming an image on a recording material, comprising:

(a) an interface control circuit for controlling an interface communicating with an outer equipment, which is driven by first spreading clock signals in which a band of a reference clock that is synchronized with a predetermined frequency is spread;

10 (b) a writing control circuit for controlling a writing section which writes according to image data, which is driven by second spreading clock signals in which a band of a reference clock that is synchronized with the predetermined frequency, is spread;

15 (c) a photoelectric conversion control circuit for controlling a photoelectric conversion section which receives light from an original document and conducts a photoelectric conversion, which is driven by third spreading clock signals in which a band of a reference clock that is synchronized with the predetermined frequency is spread; and

20 (d) at least one of a control circuit from among an operation control circuit for controlling an operation section, a sequence control circuit for controlling a sequence of an entire image forming apparatus, and an ADF control circuit for

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controlling an automatic document feeder, which are driven by
fourth spreading clock signals in which a band of a reference
25 clock that is synchronized with a predetermined frequency is
spread,

wherein the spreading width of the first spreading clock
signals is smaller than that of the second spreading clock
signals, the spreading width of the second spreading clock
30 signals is smaller than that of the third spreading clock
signals, and the spreading width of the third spreading clock
signals is smaller than that of the fourth spreading clock
signals.

Claim 9 (Previously Presented). An image forming apparatus
for forming an image on a recording material, comprising:

(a) a first spreading clock generator for spreading a band
of a reference clock that is synchronized with a predetermined
5 frequency, and generating first spreading clock signals;

(b) a first control circuit for controlling the image
forming apparatus or each of the image forming apparatus, and
which is driven by the first spreading clock signals;

(c) a second control circuit for controlling the image
10 forming apparatus or each section of the image forming apparatus;

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(d) a communication line through which a data communication is conducted between the first control circuit and the second control circuit; and

15 (e) a temporary memory section provided in the communication line for temporarily storing communicated data.

Claim 10 (Previously Presented). The image forming apparatus of claim 8 further comprising:

a second spreading clock generator for spreading a band of a reference clock signal that is synchronized with a predetermined frequency, and for generating second spreading clock signals,

wherein the second control circuit is driven by the second spreading clock signals.

Claim 11 (Previously Presented). An image forming apparatus for forming an image on a recording material, the image forming apparatus comprising:

(a) a writing section for writing according to image data;

5 (b) a first spreading clock generator for spreading a band of a reference clock that is synchronized with a predetermined frequency, and for generating first spreading clock signals;

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10 (c) a second spreading clock generator for spreading a band of a reference clock that is synchronized with a predetermined frequency, and for generating second spreading clock signals;

(d) a first control circuit for controlling the image forming apparatus or each section of the image forming apparatus, which is driven by the first spreading clock signals; and

15 (e) a second control circuit for controlling the image forming apparatus or each section of the image forming apparatus, which is driven by the second spreading clock signals,

wherein the first spreading clock generator is synchronized with the second spreading clock generator by providing a reset signal to the first and second spreading clock generators.

Claim 12 (New). The image forming apparatus of claim 3, wherein the detector outputs the index signal for each line in a sub-scanning direction.